Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
	)	
Amendment of the Commission's Rules to	)	ET Docket No. 96-102
Provide for Unlicensed NII/SUPERNet	)	RM-8648
Operations in the 5 GHz Frequency Range	)	RM-8653

JOINT REPLY COMMENTS OF THE NATIONAL SCHOOL BOARDS ASSOCIATION, MEDIA ACCESS PROJECT, CONSORTIUM FOR SCHOOL NETWORKING, AMERICAN ASSOCIATION OF SCHOOL ADMINISTRATORS, COUNCIL OF CHIEF STATE SCHOOL OFFICERS AND PEOPLE FOR THE AMERICAN WAY

The National School Boards Association, Media Access Project, Consortium for School Networking, American Association of School Administrators, Council of Chief State School Officers and People for the American Way ("Joint Commenters") respectfully submit this reply to comments filed in response to the Commission's *Notice of Proposed Rulemaking* (*"NPRM"*) FCC 96-102 (Released May 6, 1996) in the above referenced docket. For the reasons discussed below, Joint Commenters underscore their support for spectrum allocation for short and long range use by NII/SUPERNet devices.

INTRODUCTION

The parties commenting in this docket generally agree that wireless technologies like NII/SUPERNet devices can be an important part of the solution to the universal service puzzle. They present great opportunities for increased access to the National Information Infrastructure (NII), particularly for those currently without benefit of advanced communications technology. *See, e.g.*, Comments of Apple Computer, Inc. at 5; Comments of Cylink Corporation at 1; Comments of National Science Foundation Wireless Field Test for Education Project ("NSF Comments") at 1. Communities in rural areas, and those with fewer resources, are generally unable

to access the NII. They could benefit greatly where there is incentive to manufacture inexpensive yet more sophisticated communications technologies compatible with their needs and capabilities. Giving wireless technology manufacturers access to appropriate parts of the electromagnetic spectrum and to appropriate levels of power will supply that incentive.

There is widespread agreement that NII/SUPERNet wireless technologies hold promise for enhanced educational opportunities, medical services, and civic discourse, moving the country toward a ubiquitous NII. *See, e.g.*, Comments of Benton Foundation and Computer Professionals for Social Responsibility ("Benton Comments") at 2-3; Comments of the Connectivity for Learning Coalition ("CLC Comments") at 1; Joint Comments of the National School Boards Association, *et al.* ("Joint Comments") at 1. These devices could serve secondary and elementary schools that can neither afford nor support wire-based technologies, including those built with asbestos. Higher education institutions, libraries, and medical facilities would also benefit greatly from devices that can facilitate both local and longer-range communication networks, until now beyond the limits of their resources. Controversy arises, however, when considering whether to impose a licensing scheme, and where NII/SUPERNet devices should operate and at what power levels.

Joint Commenters urge the Commission to resolve these questions in a manner that permits this exciting new technology to fulfill its promise. Specifically, the Commission should

- increase the allowable power limit for low-power, short range NII/SUPERNet operations;
- permit longer range communications, be it in the 5.725-5.875 GHz range or somewhere else on the electromagnetic spectrum;
- permit unlicensed operations, but engage in a periodic review to ensure that interference is kept at a minimum.

I. THE COMMISSION SHOULD INCREASE THE ALLOWABLE POWER FOR SHORT RANGE NII/SUPERNet OPERATIONS.

With respect to indoor communications, the Commission has proposed to make available 200 megahertz of spectrum at 5.15 - 5.35 GHz for unlicensed NII/SUPERNet devices, *NPRM* at ¶34, and permit transmitters to operate with up to -10 dBW (0.1 watt) of power. *NPRM* at ¶47. Many commenters agree that 0.1 watt is not enough power to allow transmissions to pass through walls. *See* Benton Comments at 5; CLC Comments at 3; Metricom Comments at 2-4. Hence, the Commission's proposal severely limits the scope of services wireless NII/SUPERNet technology can offer to schools and like institutions. Indeed, under the Commission's proposal, students in a classroom might be unable to communicate with students in the classroom next door!

"Bleeder lines," which carry transmission signals from one wireless local area network ("LAN") to another could be one technological solution to this problem. But bleeder lines are hard-wired technology, which may often be prohibitively expensive, physically impossible, or both. Apple Comments at 6; Metricom Comments at 8-9. While a hybrid wired/wireless system might be cheaper than a wholly wired system, it still may be too costly for many of the institutions that might benefit most from NII/SUPERNet devices. Thus, if it is technologically feasible, the Commission should permit NII/SUPERNet devices to operate at power levels high enough to transmit signals without the need for hard-wired solutions.

II. THE COMMISSION SHOULD PERMIT NII/SUPERNet DEVICES TO OPERATE AT SUFFICIENT LEVELS OF POWER TO FACILITATE LONG-RANGE COMMUNICATIONS.

Out of its concern about risks of interference to other existing Part 15 services, the Commission opted not to propose to accommodate higher power, longer range NII/SUPERNet operations within the 5.725-5.875 GHz band. *NPRM* at ¶47. Some industry representatives

agree that long-range NII/SUPERNet devices would create interference and compromise existing technologies. Comments of Cylink Corporation ("Cylink Comments") at 3-4; NSF Comments at 2; Western Multiplex Comments at 3-4. But others disagree. *See, e.g.*, Apple Computer Comments at 12; Metricom Comments at 9-12.

While Joint Commenters believe that the Commission is best situated to resolve the technological issues, they urge the Commission, as one commenter did, to engage in a "rigorous engineering design and test" to determine the actual risk of interference. Cylink Comments at 1-2. Should the Commission conclude that multiple unlicensed operations using different base technologies to facilitate long-range communications cannot co-exist in the 5 GHz range, it should allocate some other range of frequencies for use by either NII/SUPERNet long-range service providers or those currently operating in the 5 GHz range of frequencies. The spectrum location of long-range NII/SUPERNet devices is important only insofar as the costs of manufacturing may rise and be passed on to American citizens and public service institutions. The Commission should consider these relative costs when making decisions about spectrum allocation, and permit those providers that offer the most services in the public interest, or provide comparable services at a lower cost, to operate in the 5 GHz band. If necessary, other Part 15 service providers should be accommodated at other frequencies.

The solution to such a technological conflict, however, should not be to deprive the public of benefits of this new technology. *See* Joint Comments at 4-7. Few would disagree that schools, libraries, health services providers and other public interest institutions, especially those in rural and depressed areas, have a great need for affordable technology that will link their facilities to the NII. In fact, links to the NII are arguably far more important than devices that

facilitate only indoor LANs. NSF Comments at 2. In addition, long-range operations can create networks that link elementary and secondary schools, buildings and libraries on sprawling college campuses, and sparsely populated rural communities, small towns and suburbs. *See id.* These needs are too critical to forego.

III. THE COMMISSION SHOULD ALLOCATE SPECTRUM FOR UNLICENSED USE NOW, RESERVING THE RIGHT TO REVISIT THE MATTER SHOULD INTERFERENCE CAUSE SIGNIFICANT CONCERNS.

Several of the parties diverge as to whether the spectrum at issue here should be made available on a (minimally) licensed or unlicensed basis, Apple Comments at 22-29; Metricom Comments at 15-17; NSF Comments at 3-4. They also differ as to whether a hierarchy of users or rules of etiquette should be established that afford preferences to those who provide services in the public interest. Benton Comments at 7-8; Cylink Comments at 8-9.

The Commission should assess which arrangement would most effectively promote services to benefit the widest audience and satisfy the highest need. While a licensing arrangement might minimize the risk of interference among users, unlicensed access does allow industries to operate at lower cost, keeping technologies cheaper for the American public. This lesser expense may foster efficient use of the spectrum and allow industry to make devices for use by public service institutions at affordable rates. Yet, without formal spectrum allocation, efficient spectrum sharing may prove elusive, similarly risking increased service to the public.

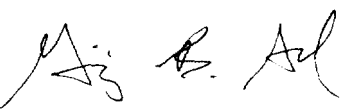
Because it would lower the cost of these new technologies, Joint Commenters urge the Commission to permit unlicensed NII/SUPERNet operations in the short term. However, it should engage in periodic review of the amount of users and interference within that band, and reserve for itself the right to impose a simple and inexpensive licensing scheme should the need

arise.[1]

CONCLUSION

The Commission should take full advantage of this unique opportunity to facilitate large scale, low cost wireless connections. Permitting short and long range NII/SUPERNet operations would do a great service for students and teachers, doctors and patients, and a host of public service organizations who cannot access the NII through available hard-wired technology.

Respectfully Submitted,



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[1]In the alternative, the Commission may chose to address the problem of interference by devising a hierarchy of users and/or uses. If the Commission does so chose, such a hierarchy should rank highly all those initiatives that provide the most service to public institutions such as schools, hospitals and libraries, at the lowest cost, in keeping with the goals of the Telecommunications Act of 1996. Joint Comments at 2-3, 7-8.